

10.1 Question and Answer Matrix			
As of December 31, 2009			
ID#	Date	Topic Area	Question
1	11/25/2009	10.1-002	This topic is nearly the exact same as the TFA-3 of BAA09-19 "Rare variant detection in a bacterial sample using ultra-high throughput next generation sequencing technology", while papers due on November '18. Is this a coincidence or is this a statement regarding the White Paper submissions for TFA-3? Do you expect to fund both the TFA-3 and the SBIR or does this imply there is no more funding for the TFA-3? Or are these wholly unrelated topic requests (such as they come from two different parts of DHS)?
2	11/25/2009	10.1-003	The deliverables for Phase I state "Federal, state, and local collaborations need to be addressed." Does this mean that such collaborations for testing, etc. need to be arranged by the end of Phase I?
3	11/25/2009	10.1-003	1. By the deliverable "design a framework usable for homeland security applications," does that mean the design of an architecture in which "science tools and technologies already being investigated by the Science and Technology Directorate's Command, Control and Interoperability Basic and Future Research" can be integrated into one framework. 2. If so, will these technologies be made available for integration into the prototype system for testing in Phase II, or even for evaluation in Phase I?
4	11/25/2009	10.1-003	Is the objective of this solicitation to develop a suite of Groupware or "Glueware" or CSCW (computer supported cooperative work) tools that will enable the integration of existing NVAC tools (visual analytics, discrete science tools, etc.) into a "new common platform" and then allow the interaction and cooperation of multiple individuals at heterogeneous levels?
5	11/25/2009	10.1-003	Does the solicitation relate to DHS's existing ICAV (Integrated Common Analytical Viewer) in any way?
6	11/25/2009	10.1-003	We are very interested in providing technological solutions that both horizontally fuse and vertically abstract information collected from many data sources. For example, first responder information from the police, fire department, and hospitals, all of which may be reporting different aspects of the same event, could be fused and resolved to provide a single, easily interpreted view of a certain event (e.g. the person arrested for fighting was also outside the burning building on 58th st.). Once fused, this information could be aggregated and abstracted across the chain of command, providing both detailed, street-level information to first responders and high-level statistics and overviews to higher level commanders. Would a technology like this be relevant and useful to this solicitation?
7	11/25/2009	10.1-003	Would Phase I feasibility look significantly into novel and innovative solutions that will effectively meet DHS needs and requirements for information sharing and abstraction amongst various first responders' actions (particularly for wide area disaster management) and leave the pragmatic/developmental issues such as integration of such novel solutions with the DHS platforms for Phase I? Or does the most respected DHS Program Manager expect a Phase I effort that is directed to development solutions integrated with the existing DHS platforms from the commencement of Phase I effort?
8	11/25/2009	10.1-003	Would building a visualization capability that adapts and tunes the information presented to the appropriate level of abstraction commensurate with the operational needs of any particular recipient first responder edition a needed capability to be developed under this SBIR topic?
9	11/25/2009	10.1-001 and General	The Phase I for the subject SBIR Topic calls for a weighing various technology options and a simulation of the recommended approach(es) that demonstrate the technology. If a company has a proprietary technology that has the potential to meet the requested performance would it be acceptable to submit a proposal that skips the Phase I objective to focus on building the Phase 2 advanced prototypes.
10	11/25/2009	10.1-004	What starting TRL level for the Phase I program is envisioned?
11	11/25/2009	10.1-004	If one proposes development of a new sensing molecule for an explosive compound, will it be within the scope of the program?
12	11/25/2009	10.1-004	How many different compounds should be targeted in the Phase I and Phase II of the works?
13	11/25/2009	10.1-004 and General	In the proposal structure, will it be possible to provide the technical background in the work plan section instead of the related work section?

#### Answer

Yes, it is the same topic as TFA-3 in BAA09-19. It was originally meant just for the SBIR solicitation but because of the importance of this topic to DHS, we also put it into the BAA to open it up to other researchers not involved in small businesses. It is our intent to fund proposals received in response to both the BAA and the SBIR solicitation, as funding permits.

No, but how such collaborations would be enabled needs to be explained in Phase I.

1. Yes  
Not in Phase I, but in Phase II.

No, "glueware" is not the objective.

Not at all related to ICAV.

Data fusion is not the objective. It was not mentioned in the solicitation topic description.

Novel approaches would be welcome for this effort.

Although visualization is important, it is not the primary component for this work. Hence, building one should not be the focus.

No. Per the Small Business Administration's SBIR Policy Directive, Phase II funding must be based upon the results of Phase I, as Phase II continues the research/research and development effort from the completed Phase I.

Due to the fact that bio-inspired sensor technologies are still relatively immature, we are looking for innovative efforts to incorporate these technologies into working detection systems. We are looking for what the small business community can come up with for incorporating these technologies of immuno-, enzymatic and whole cell sensors or other innovative bio-inspired technologies. Innovative and creative merging of traditional explosives detection technologies with bio-inspired technologies are also of interest. For Phase I, we are looking for feasibility of the concept so a TRL of 2 or higher is preferred though if you could get a technology with a starting TRL of 1 to perform in a promising way, that would be acceptable.

If proposing a new sensing molecule fits into the ideas of molecular imprinted polymers and/or other utilization of bio-inspired technologies, it would fit into the scope of this program. Please refer to the following Review paper for more info on the bio-inspired technologies: Richard G. Smith, Nalashia D'Souza and Stephen Nicklin, "A Review of Biosensors and Biologically-Inspired Systems for Explosives Detection" *Analyst*, 2008, 133, 571 - 584.

For Phase I, the proof of concept can involve one or more compounds and by Phase II, at least 2 compounds and one class (i.e. nitroamines or peroxides) should be shown as detectable by the technology.

For the proposal structure, please follow the proposal preparation guidance provided in the solicitation.

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14	12/10/2009	10.1-001	1. What background information can you provide regarding DHS's interest in advancing the state-of-the-art of energy storage devices – i.e., beyond what is commercially available? 2. In particular, is there a specific existing and/or future DHS program for which energy storage is a limiting factor ( & is perhaps the basis for this topic)?	1. We are interested in developing "low-loss"/"loss-less", electrical storage devices that are very small and compact. The application is for small unattended sensors and tagging devices that need to be concealed and operate autonomously without being connected to an external power grid. Current commercial batteries do not provide the size, weight, and power requirements that are needed for our future applications. 2. Unattended sensors and small tagging devices.
15	12/10/2009	10.1-001	To assess compliance with the requirements stated in the topic, can you provide a typical average power draw for the target application (e.g., cell phone)?	Transmit -200 mW of power, 3 second burst every 60 seconds.
16	12/10/2009	10.1-001	1. Is it fair to assume that the emphasis is on increasing energy density and less on increased power density? 2. Would this topic be open to new materials (e.g., electrodes and/or electrolytes) enabling increased performance of energy devices?	1. Yes 2. Yes
17	12/10/2009	10.1-005	Is it possible to get more information about the "H-SB010.1-005 Synthetic Biometrics" research?	The solicitation topic description contains all of the information that is available at this time. The references for synthetic biometrics provided in the solicitation topic description should provide a good background on the topic.
18	12/10/2009	10.1-005	Is it permitted to integrate some current biometrics (or synthesis) SDK from other companies in the prototype tool?	Integration of existing components or tools is acceptable as long as plans for coordinating intellectual property, licensing, and/or subcontracting procedures are identified in the proposal.
19	12/10/2009	General	1. Can you tell me how many proposals you received for the last solicitation and how many were awarded? 2. Can you tell me the budget for new Phase I's?	1. The DHS S&T Directorate's SBIR Program received 155 proposals in response to the eight topics in the FY09 2 solicitation. Thirty Phase I contracts were awarded (details can be found at <a href="https://www.sbir.dhs.gov">https://www.sbir.dhs.gov</a> , under the Awards link). 2. Historically, three Phase I contracts and one Phase II contract are budgeted to be awarded per topic area, assuming quality proposals and available funds.
20	12/10/2009	10.1-003	1. What is meant by Visual Analytics? a) Some way of analyzing data via visual graphic manipulation? b) Display of data in graphic ways? c) Other 2. What is meant by Synthetic World? a) Standard Stand-alone virtual world? b) Virtual world somehow integrated w/in the real world? c) Other	1. Visual Analytics is defined in the web sites referenced in the topic description. 2. "Synthetic worlds" refers to capabilities illustrated by Second Life and some modern gaming environments.
21	12/10/2009	10.1-002	Is the SBIR solicitation limited to commercially available NGS platforms?	No, the solicitation topic is not limited to commercially available NGS platforms. However, the platform must be sufficiently mature in terms of development to compete with the commercially available platforms and be able to address the needs outlined in the solicitation topic description. This will need to be clear in the proposal. Supporting data should be provided in the proposal to back up the claim of sufficient maturity.
22	12/10/2009	10.1-005	1. Does the program manager have a preference for the type of biometric generated (faces vs. irises vs. fingerprints, etc)? 2. On a related note, is it preferable for the solicitation to address a single type of biometric (e.g. faces) or multiple biometrics (e.g. faces, irises, palms, etc)? 3. Can you provide any clarification on the specific performance metrics for Phase I? The solicitation call is for generation of biometrics that match the demographics and statistical attributes of the real world. Is there any information available about how this similarity will be measured?	1. The program manager does not have a preference, but the program is meant to address DHS' needs and requirements. The topic description specifically mentions fingerprints, irises, and/or facial biometrics that are believed to represent the greatest need at this time. The first phase allows for the needs and requirements assessment to be conducted and the specific approach to be identified as part of that effort. 2. There is no preference to address a single biometric type vs. multiple biometrics. 3. The metrics should be established as part of the Phase I effort based on the needs and requirements assessment, the study of candidate approaches and the identification of viable technologies. Some of the metrics established could address specific quantifiable performance measures for the similarities between the synthetic and real world data (e.g., resolution) while others metrics may be more qualitative (e.g., realism).
23	12/10/2009	10.1-006	1. What are typical tunnel dimensions and lengths? 2. What are typical mission durations? i.e. if drift rate is a primary error factor, over how long must drift remain within bounds? 3. What systems, if any, are presently used to map tunnels in real-time? i.e., what is this project intended to generate a replacement for? And, what is their accuracy? 4. What software is used to create and edit existing maps, independent of the real-time component?	1. For the purposes of this solicitation topic, the tunnel will be one meter in diameter and 2000 feet long. 2. For the purposes of this solicitation topic, a mission length will be one hour. 3. For the purposes of this solicitation topic, no system is presently being used to map tunnels. The accuracy associated with any mapping function proposed is as stipulated in the solicitation topic description for locating accuracy. 4. For the purpose of this solicitation topic, development of mapping software is not intended. Assume no systems are presently fielded with these functions and the functions can be adequately addressed by the capabilities of commercially available software.
24	12/10/2009	10.1-004	My colleague and I are interested in the SBIR topic on Molecular Recognition of Explosives Detection. The approach we are considering is to use Molecularly Imprinted Polymers on a microcantilever system for the detection. Would this approach be within the focus of what you are looking for?	Yes, your technical idea does fall into the range of intended technologies for the SBIR topic Molecular Recognition of Explosives Detection. Please refer to the following Review paper for more info on the bio-inspired technologies: Richard G. Smith, Natasha D'Souza and Stephen Nicklin, "A Review of Biosensors and Biologically-Inspired Systems for Explosives Detection" <i>Analyst</i> , 2008, 133, 571 - 584.
25	12/10/2009	General	Are SBIR solicitations only done on an annual basis? <a href="https://www.sbir.dhs.gov/currentsolicitation.aspx">https://www.sbir.dhs.gov/currentsolicitation.aspx</a> . The current solicitations have a closing date of Jan. 4, 2010.	The DHS Science and Technology (S&T) Directorate issues SBIR solicitations two times each year. Generally, solicitations are released in the November and May timeframes. The DHS Domestic Nuclear Detection Office (DNDO) releases SBIR solicitations once each year, generally in the spring timeframe. For more information on the DHS S&T SBIR Program, please visit <a href="https://www.sbir.dhs.gov">https://www.sbir.dhs.gov</a> . For more information on the DHS DNDO SBIR Program, please visit <a href="https://dnodob.sbir.dhs.gov/">https://dnodob.sbir.dhs.gov/</a> . The current S&T SBIR Solicitation has a closing date of 6 January 2010. It was extended from 4 January 2010.
26	12/10/2009	General	If I "Recommend a Topic" and DHS feels that topic has merit, what would be the earliest possible "Posted Date" and "Closing Date"? <a href="https://www.sbir.dhs.gov/submitrecommendation.asp">https://www.sbir.dhs.gov/submitrecommendation.asp</a>	Recommended topics will be considered if the research area is relevant to DHS and its mission, there is a critical agency requirement, and the research is unique. Other programmatic priorities will also be considered. A topic recommendation is not the same as submitting a proposal. Potential topic recommendation submitters will not be contacted unless further information is needed. Submitters of potential topics should monitor future solicitations. Due to the nature of a "recommended topic", it is not possible to provide a "posted date" and/or "closing date".



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27	12/10/2009	General	If I recommend a topic, and DHS feels the topic has merit, what happens if I have patent rights regarding the technology of the solicitation?	The Small Business Act provides for "retention by a small business concern of the rights to data generated by the concern in the performance of an SBIR award." The Federal Acquisition Regulation, FAR 52.227-20, addresses the rights in data developed under an SBIR funding agreement. If you have existing patents on the technology you propose in response to the SBIR topic description, we would expect you to apply them (as necessary at no charge) to the government.
28	12/10/2009	General	Other than SBIR, does DHS have any other grant programs for small businesses? It seems that most of your grants are focused on government organizations and universities.	The DHS SBIR program specifically has funding available for small businesses to conduct research in areas that are relevant to the Chemical and Biological, Borders and Maritime Security, Human Factors, Explosives, Infrastructure and Geophysical, and Command, Control and Interoperability Divisions. Similar to the R&D programs of the S&T Directorate, the SBIR topics generally address the needs of the seven DHS Operational Units, i.e., U.S. Coast Guard, U.S. Transportation Security Administration, U.S. Customs and Border Protection, Federal Emergency Management Agency, U.S. Citizenship and Immigration Services, U.S. Immigration and Customs Enforcement, and U.S. Secret Service, as well as First Responders. Regarding other small business opportunities, please refer to the Long Range Broad Agency Announcement which is open through 31 December 2009. The Long Range Broad Agency Announcement can be found at <a href="https://oaa.st.dhs.gov/">https://oaa.st.dhs.gov/</a> . You will also find other active Solicitations on a broad range of topics at that site.
29	12/10/2009	10.1-004	I am interested in submitting a SBIR proposal in response to your DHS announcement: SBIR Topic Number: H-SB010.1-004, Title: Molecular Recognition for Explosives Detection. Can we discuss our proposal so I make sure we address your solicitation issues correctly?	Per the solicitation, Section 1.6 e., "no further direct contact between proposers and Technical Points of Contact shall occur from November 16, 2009 through January 6, 2010 for reasons of competitive fairness." However, we can offer the following per the topic description. Due to the fact that bio-inspired sensor technologies are still relatively immature, we are looking for innovative efforts to incorporate these technologies into working detection systems. We are looking for what the small business community can come up with for incorporating these technologies of immuno-, enzymatic and whole cell sensors or other innovative bio-inspired technologies. Innovative and creative merging of traditional explosives detection technologies with bio-inspired technologies are also of interest. Please refer to the following Review paper for more information on the bio-inspired technologies: Richard G. Smith, Nalash D'Souza and Stephen Nicklin, "A Review of Biosensors and Biologically-Inspired Systems for Explosives Detection" <i>Analyst</i> , 2008, 133, 571-584.
30	12/10/2009	General	Can you please verify how many pages the cost proposal will count for against the 25 page limit for the DHS SBIR. The solicitation listed that the cover sheet will count as 2 pages, the technical proposal will begin at page 3, but what page number will the technical proposal end to accommodate the cost proposal page length?	Per the solicitation, Section 3.5 c., "The Cost Proposal will count as one page of your proposal no matter how it prints out."
31	12/10/2009	General	I am working on a Phase 1 proposal for the H-SB010.1 solicitation. According to the solicitation document, the cost proposal is included in the 25-page limit. I would like to know if there is a pre-assigned number of pages the cost proposal is worth (as the cover sheet is worth 2 pages) or if it depends on the actual length of the cost proposal generated on-line.	Per the solicitation, Section 3.5 c., "The Cost Proposal will count as one page of your proposal no matter how it prints out."
32	12/10/2009	10.1-005	I am focusing on only one biometric acceptable or will you only evaluate proposals that attempt to cover all modalities?	There is no preference to address a single biometric type vs. multiple biometrics. The program is meant to address DHS needs and requirements and the topic description specifically mentions "fingers, irises, and/or facial biometrics that are believed to represent the greatest need at this time."
33	12/17/2009	General	I had difficulty to visit your website <a href="https://www.sbir.dhs.gov">https://www.sbir.dhs.gov</a> . Could you please point out where and how I could access the latest solicitation and submit our proposals?	The DHS S&T Directorate's SBIR solicitations are posted on the Federal Business Opportunities website ( <a href="http://www.fbo.gov">www.fbo.gov</a> ). Use the advanced search feature; solicitation # is DHS-SBIR-2010.1 and the SBIR website. You may be having difficulty accessing the solicitation from the SBIR website because some browser manufacturers currently do not recognize the authorized DHS certificate. You may receive a warning or error message stating that the certificate is from an unknown authority. The message is a minor issue with an easy workaround. Here are the instructions for proceeding to the website: INTERNET EXPLORER 7 • In Internet Explorer, click the "Continue to this website (not recommended)" link. • The site should load normally. FIREFOX 3 • Select the "Or you can add an exception" link. • Select the "Add Exception" button. • A dialogue box should appear. Select the "Get Certificate" button. • Select the "Confirm Security Exception" button. • The website should load after you press the final button. You only need to add the certificate once per machine. You should experience a quicker load time once the security certificates are added or excepted. Then access the "Current Solicitation" and "Proposal Submission" tabs.
34	12/17/2009	10.1-001	1. Could you provide more details on the battery to be replaced (i.e. baseline cell)? 2. Could you provide targets on energy density, Wh/kg and/or Wh/l?	1. Typical battery pack found in cell phones. 2. Target energy densities to exceed typical cell phone battery packs.
35	12/17/2009	10.1-005	The questions I have are related to the applications space of your SBIR request. For example, the total anticipated quantity of units to be deployed could be a factor due to the availability in sufficient quantities of certain radioactive isotopes. The location of use of these batteries could dictate their applicability (CONUS vs. remote areas). The time of use, 6 months or years? Human use (i.e., Cell/Sat phone) or unattended sensor? Disposable vs. re-usable? Can you please give me some guidance as to one or a few particular specific applications of interest to help narrow down the field?	Primary application is in two areas ... unattended sensors that can be placed along the Southern or Northern US Borders with Mexico and Canada. These devices need to be concealed and be able to operate without recharging or replacement over long periods of time (see also the SBIR topic description for storage examples using cell phone technologies). The other use would be for concealed tags that would be affixed to people, objects, or vehicles. These devices would be extremely small and would also require long operating times without being recharged or replaced.

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36	12/17/2009	10.1-006	<p>1. Are there target KPIs for size, weight, or power consumption?</p> <p>2. Can you characterize the "typical" ground/rock/soil types that the system must work in?</p> <p>3. Can we assume that longwave radio signals will propagate in the relevant environments?</p> <p>4. What about acoustic signals?</p>	<p>1. No specific size, weight, or power consumption performance parameters are provided. Smaller, lighter, and less power consuming is more desirable.</p> <p>2. There are no "typical" ground/rock/soil types that the system must work in.</p> <p>3. It must be able to perform in any and all.</p> <p>4. The technology choice is left to the offeror.</p>
37	12/17/2009	General	Where should the "Anticipated Benefits and Potential Commercial Applications" data be entered on the Cover Sheet?	Please include the "Anticipated Benefits and Potential Commercial Applications" in the technical abstract portion of the cover sheet. Note that, per the solicitation (3.5.a) "If your proposal is selected for award, the technical abstract and discussion of anticipated benefits will be publicly released on the DHS S&T SBIR website; therefore, do not include proprietary or classified information in these sections."
38	12/17/2009	General	We currently are in the process of proposing for a phase 1 DHS SBIR. In the solicitation it states that the cost proposal and the cover sheet will count against the page limit. It also clarifies that the cover sheet will count as 2 pages of the 25 page limit but it does not state how many pages the cost proposal will count. Can you please provide me with the number of pages the cost proposal will count against the page length?	Per the solicitation, Section 3.5.c, "The Cost Proposal will count as one page of your proposal no matter how it prints out."
39	12/17/2009	General	Are we still able to submit technical questions relating to a specific SBIR topic in the current solicitation? If so, are these questions and answers made publicly available?	From November 18, 2008 through January 6, 2010 proposers may submit written questions to STS@DHS.gov. Questions must be limited to technical information related to improving the understanding of a particular topic's requirements; any other questions, such as those asking for advice or guidance on solution approach, will not receive a response. If information given in response to a question is deemed necessary for the preparation of proposals, that information will be made available to the public for general viewing on the FedBizOps website at <a href="http://fedbizops.gov">http://fedbizops.gov</a> and on the DHS SBIR website at: <a href="https://www.sbt.dhs.gov">https://www.sbt.dhs.gov</a> .
40	12/17/2009	10.1-006	<p>1. Is two-way communication between subterranean and above-ground personnel required for the GRIDLOC effort?</p> <p>2. Are there any size and weight constraints for the system?</p> <p>3. What is the typical duration of a subterranean mission?</p>	<p>1. As discussed in the solicitation topic description, the purpose of GRIDLOC is to provide the current position of the system to personnel on the surface for possible rescue response. Two-way communication capability is not a requirement of the solicitation.</p> <p>2. No specific size, weight, or power consumption performance parameters are provided. Smaller, lighter, and less power consuming is more desirable.</p> <p>3. For the purposes of this solicitation topic description, a mission length will be one hour.</p>
41	12/17/2009	10.1-006	<p>1. For robotics-oriented solutions, can we assume a fiber optic link to the robot?</p> <p>2. For first responders, what gear requirements can we impose?</p>	<p>1. The commercial robots are tethered and have controls and sensor data links. No standards have been established and therefore no assumptions should be made with regard to specific configuration.</p> <p>2. There are no restrictions to the configuration of the proposed system.</p>
42	12/17/2009	10.1-006 and General	I am considering going for the SBIR topic H-SB910-1-006 GPS resolution in denied locations (GRIDLOCK). A key technology component resides with a Canadian firm. We intend to use the technology in a new manner that appears to directly solve the SBIR problem challenge but we would need some design modifications. What is the policy of having a non-US company perform work on an SBIR project?	Per the SBIR Policy Directive, 2002, Section 6a.(5), "For both Phase I and Phase II, the R&D work must be performed in the United States. However, based on a rare and unique circumstance, agencies may approve a particular portion of the R&D work to be performed or obtained in a country outside of the United States, for example, if a supply or material or other item or project requirement is not available in the United States. The funding agreement officer must approve each such specific condition in writing."
43	12/17/2009	10.1-004	Is it sufficient that the technology detect explosives in a solid (e.g. powder) or liquid medium or is it necessary to also detect airborne explosives?	In addition, per SBIR Policy Directive, Section 6(a)(2), "For Phase I, a minimum of two-thirds of the research or analytical effort must be performed by the awardee. Occasionally, deviations from this requirement may occur, and must be approved in writing by the funding agreement officer after consultation with the agency SBIR Program Manager/Coordinator."
44	12/17/2009	10.1-004	Who will be the primary intended customer(s)? TSA baggage screeners? Port security? Law enforcement? Hazardous materials teams in fire departments?	Due to the fact that bio-inspired sensor technologies are still relatively immature, we are looking for innovative efforts to incorporate these technologies into working explosive detection systems. We are looking for what the small business community can come up with for incorporating these technologies of immuno-, enzymatic and whole cell sensors or other innovative bio-inspired technologies. Innovative and creative merging of traditional explosives detection technologies with bio-inspired technologies are also of interest. Please refer to the following Review paper for more info on the bio-inspired technologies: Richard G. Smith, Natasha D'Souza and Stephen Nicklin, "A Review of Biosensors and Biologically-Inspired Systems for Explosives Detection" <i>Analyt.</i> 2008, 133, 571 – 584. Due to the challenges of incorporating these technologies into a working explosive detector, it is not a requirement to detect airborne explosives though it would be an exceptional technology if the technology could detect both gas and solids/liquids.
45	12/17/2009	10.1-004	Are sensors that provide gas-phase detection preferred over solution-phase sensors for the homeland security applications connected with this topic? Would a sensor that provided lower sensitivity and/or lower selectivity for gas-phase detection be preferred over a solution-phase sensor with higher sensitivity and/or selectivity? Are there specific quantitative targets in mind for sensitivity and selectivity? If so, what are these values for gas-phase and solution-phase samples? What requirements are there regarding sensor size, weight, and power consumption? Does the sensor need to be portable?	We are interested in bio-inspired technologies such as immuno-, enzymatic and whole cell sensors or other innovative bio-inspired technologies. Innovative and creative merging of traditional explosives detection technologies are also of interest. Due to the challenges of incorporating these technologies into a working explosive detector, it is not a requirement that these sensors detect in the gas-phase. If a sensor was very sensitive and selective and solution-phase, it would be considered. The types of sensitivity we are looking at are parts per million but if a technology could sense a large number of explosives but was less sensitive, it would still be considered. For Phase I, the proof of concept is required and it does not need to be portable. To advance to further phases, the technology does need to be portable (can be heavier and bulkier than hand-held). Please refer to the solicitation topic description.
46	12/17/2009	10.1-003	Are there specific DHS information technologies that should be considered for integration into the envisioned system?	The references to the VNAIC, which were provided in the solicitation topic description, will suggest technologies for incorporation. The work underway at the VACONE (Visual Analytics for Command, Control and Interoperability Environments) Center at Purdue and the CC/CADA Center (Command, Control, and Interoperability Center for Advanced Data Analytics) at Rutgers also highlights technologies that should be considered.



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47	12/31/2009	10.1-001	We believe that by using nanomaterials we can make batteries that are less expensive, higher energy and power density, and that can use polymers instead of metals in order to lower device weight. Graphene has very high conductivity and has two times the surface area of even carbon nanotubes, so that it can be a very efficient electrode. The Vanadium Oxide nanowires have been shown in studies to more than double the energy density of the cathode materials. Would a proposal evaluating these materials, and for Phase II building prototypes with these materials, be in line with what the DHS is looking for in this solicitation?	Yes. We would be interested in this technology.